Strategy Research Project

Balancing Petroleum Force Structure/Capabilities between Active and Reserve Components

by

Colonel Kenneth R. Hook
United States Army

United States Army War College
Class of 2013

REPORT DOCUMENTATION PAGE

Form Approved
OMB No. 0704-0188

1. REPORT DATE *(DD-MM-YYYY)*	**2. REPORT TYPE**	**3. DATES COVERED** *(From - To)*
xx-03-2013	STRATEGY RESEARCH PROJECT	

4. TITLE AND SUBTITLE
Balancing Petroleum Force Structure/Capabilities between Active and Reserve Components

5a. CONTRACT NUMBER

5b. GRANT NUMBER

5c. PROGRAM ELEMENT NUMBER

6. AUTHOR(S)
Colonel Kenneth R. Hook
United States Army

5d. PROJECT NUMBER

5e. TASK NUMBER

5f. WORK UNIT NUMBER

7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES)
Colonel Robert M. Mundell
Department of Command, Leadership, and Management

8. PERFORMING ORGANIZATION REPORT NUMBER

9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)
U.S. Army War College
122 Forbes Avenue
Carlisle, PA 17013

10. SPONSOR/MONITOR'S ACRONYM(S)

11. SPONSOR/MONITOR'S REPORT NUMBER(S)

12. DISTRIBUTION / AVAILABILITY STATEMENT
Distribution A: Approved for Public Release. Distribution is Unlimited.

13. SUPPLEMENTARY NOTES
Word Count: 5106

14. ABSTRACT

This paper describes organizational and operational concepts associated with Army petroleum force structure that are required for early entry tactical receipt, distribution, command and control, quality surveillance, and engineering oversight of Inland Petroleum Distribution (IPDS) capabilities, thereby allowing the Army to execute Title X responsibility for the inland distribution of petroleum in a theater of operation. It also discusses the impact of not having any petroleum brigades in the active force structure to meet theater receipt, storage and distribution during the early stages of combat operations. It brings to light the importance of having petroleum expertise resident in the active force to continue developing future technical expertise in planners and managers at the sustainment brigade, the Expeditionary Sustainment Command (ESC), Theater Sustainment Command (TSC), Army Service Component Command (ASCC), and Defense Logistics Agency (DLA) levels.

15. SUBJECT TERMS
Title X Requirements, Mobilization, Inland Distribution System, Leader Development and Training

16. SECURITY CLASSIFICATION OF:			**17. LIMITATION OF ABSTRACT**	**18. NUMBER OF PAGES**	**19a. NAME OF RESPONSIBLE PERSON**
a. REPORT	**b. ABSTRACT**	**c. THIS PAGE**			**19b. TELEPHONE NUMBER** *(Include area code)*
UU	UU	UU	UU	30	

USAWC STRATEGY RESEARCH PROJECT

Balancing Petroleum Force Structure/Capabilities between Active and Reserve Components

by

Colonel Kenneth R. Hook
United States Army

Colonel Robert M. Mundell
Department of Command, Leadership, and Management
Project Adviser

This manuscript is submitted in partial fulfillment of the requirements of the Master of Strategic Studies Degree. The U.S. Army War College is accredited by the Commission on Higher Education of the Middle States Association of Colleges and Schools, 3624 Market Street, Philadelphia, PA 19104, (215) 662-5606. The Commission on Higher Education is an institutional accrediting agency recognized by the U.S. Secretary of Education and the Council for Higher Education Accreditation.

U.S. Army War College
CARLISLE BARRACKS, PENNSYLVANIA 17013

Abstract

Title:	Balancing Petroleum Force Structure/Capabilities between Active and Reserve Components
Report Date:	March 2013
Page Count:	30
Word Count:	5106
Key Terms:	Title X Requirements, Mobilization, Inland Distribution System, Leader Development and Training
Classification:	Unclassified

This paper describes organizational and operational concepts associated with Army petroleum force structure that are required for early entry tactical receipt, distribution, command and control, quality surveillance, and engineering oversight of Inland Petroleum Distribution (IPDS) capabilities, thereby allowing the Army to execute Title X responsibility for the inland distribution of petroleum in a theater of operation. It also discusses the impact of not having any petroleum brigades in the active force structure to meet theater receipt, storage and distribution during the early stages of combat operations. It brings to light the importance of having petroleum expertise resident in the active force to continue developing future technical expertise in planners and managers at the sustainment brigade, the Expeditionary Sustainment Command (ESC), Theater Sustainment Command (TSC), Army Service Component Command (ASCC), and Defense Logistics Agency (DLA) levels.

Balancing Petroleum Force Structure/Capabilities between Active and Reserve Components

> Throughout the struggle, it was in his logistic inability to maintain his armies in the field that the enemy's fatal weakness lay. Courage his forces had in full measure, but courage was not enough. Reinforcements failed to arrive, weapons, ammunition and food alike ran short, and the dearth of fuel caused their powers of tactical mobility to dwindle to the vanishing point. In the last stages of the campaign they could do little more than wait for the Allied advance to sweep over them.
>
> —Dwight D. Eisenhower[1]

Background

General Eisenhower's assessment of enemy logistical deficiencies on the eve of the allied defeat of the German army during World War II highlight the vital role effective logistics planning and execution fulfills in waging and winning wars. His insightful assessment provides senior Army leaders much to consider as the Army grapples with the challenge of providing highly trained and ready forces with the right mix of capabilities and force structure required to support Joint War Fighting requirements in an era of fiscal constraint. Currently, the Active Component (AC) no longer has the required petroleum specific capabilities or force structure to adequately meet theater receipt, storage and distribution requirements during the early stages of combat and contingency operations because over 95% of this capability resides in the Army Reserve and National Guard. Likewise, it lacks the capability to develop technically competent petroleum planners and managers at the Sustainment Brigade, Expeditionary Sustainment Command, Theater Sustainment Command, Army Service Component Command and Defense Logistics Agency Energy levels. These dynamics pose a risk to the Army's ability to meet its Title X requirements.

These Title X requirements are codified in the most current version of Department of Defense (DoD) directive 4140.25M that communicates policy pertaining to energy commodities and related services, and assigns the Army with the requirement to provide bulk petroleum and water support for all U.S. land forces to include Air Force, Marine and Naval units ashore. In accordance with this directive, the Army is singularly responsible for ensuring effective and responsive petroleum (POL) support by funding, maintaining and employing tactical storage and distribution systems to supplement fixed facilities, and to maintain laboratories required for certifying the testing and evaluation of petroleum related products used for ground vehicle and equipment system applications and other than fixed wing aircraft. Most importantly, the directive mandates the Army to provide the necessary force structure and capabilities to install and operate tactical petroleum storage and distribution systems to include pipelines during peacetime and wartime missions that facilitate the successful and efficient deployment and employment of forces.

The Inland Petroleum Distribution System (IPDS) enables the Army to meet the vast majority of requirements associated with its Title X responsibilities. The system was initially developed in the early 1980s following a comprehensive study conducted by the U.S. Army Quartermaster School that revealed there was no effective means of providing bulk petroleum support for land forces in austere and undeveloped theaters of operations. Since its inception, IDPS has proven effective in enabling U.S. land forces to achieve and maintain tactical, operational and strategic advantage through rapid and decisive movement and maneuver.

Recently, the Combined Arms Support Command (CASCOM) Force Development Directorate – conducted a Doctrine, Organization, Training, Material, Leadership and Education, Personnel, and Facilities (DOTMLPF) assessment of the Army's petroleum force structure to identify potential gaps in operational capability.[2] This analysis identified several shortfalls associated with the tactical receipt, distribution, command and control structure, liaison requirements, quality surveillance, and engineering oversight in the IPDS during the early phases of operations. These findings underscored concerns recently voiced by senior Army and Joint Force leaders that suggest the Army may not have adequate access to petroleum capabilities and force structures required to enable Army land forces the ability to execute effectively during the early stages of operations, primarily because the preponderance of this capability resides in the Reserve Component. Current petroleum force structure is distributed throughout the Army, with 91% is in the Army reserve, 4% in the National Guard, and only 5% in the AC.[3]

The CASCOM Force Development Directorate assessment and senior Army leader concerns came to fruition during an operational level rehearsal of concept (ROC) drill held in April 2012.[4] The results of the assessment and ROC drill also stressed the need for a carefully planned and managed Time Phased Force Deployment Data List (TPFDDL). To alleviate these concerns an early entry capability that bridges the gap between the onset of hostilities and a Presidential call-up and Reserve mobilization is required.

In response to these findings, the Army implemented the current Force Design Update (FDU). The FDU, informed by the Total Army Analysis (TAA) process emerging

growth requirements, was intended to mitigate the aforementioned gaps associated with IPDS.[5] The FDU was designed to provide commanders the minimum petroleum capability while Reserve Component petroleum forces mobilize and prepare for deployment. While well intended, many of the results stemming from the FDU are problematic. Specifically, three POL groups in the Reserve Component are all programmed for deactivation between Fiscal Year (FY) 2012 and 2014, with no planned replacements, and there is only one petroleum group in the Active Component which has been deactivated as of FY 2012. Furthermore, there are no petroleum groups, brigades or battalions assigned to the Active Component, and there are only three petroleum support companies in the Active Component. Additionally, the FDU provided no increase in the number of petroleum personnel in Combat Sustainment Support Battalions (CSSB).

Based on the current distribution of petroleum force structure and capabilities between Active and Reserve Components, the Army must rely heavily on Army reserve petroleum pipeline and terminal operating (PPTO) companies and POL Battalions. Historically, these units are typically not operationally available based on the 34 day required mobilization process that allows Reserve Components to execute requirements essential to deployment. In reality, this process, in some cases, can take 50-60 days to complete and allow a unit to meet all operational readiness requirements. The CSSB is not structured to command POL units and provide technical oversight previously performed by functional POL Battalions, and the Sustainment Brigade is not structured to assume command and control responsibilities of units that were previously managed by POL Groups. Based on these gaps, much of the effort falls on the shoulders of the

Expeditionary Sustainment Command (ESC), which is also not fully capable or designed to plan or manage POL operations.

Liaison and Quality Assurance (QA)/Quality Surveillance (QS) previously performed by the POL Group now require the mobilization of Liaison Teams that reside solely in the Army Reserve. The POL Battalion and POL Group Engineer branches that previously planned and provided oversight for the construction of the IPDS no longer exist, and the CSSB and Sustainment Brigade Engineers, which are primarily trained and organized to execute horizontal construction of roads to open ports, base camps, and other tasks, now have to plan and construct POL pipeline without any additional resources. Additionally, the loss of technical expertise among mid-grade petroleum personnel is the direct result of the absence of force structure from which to grow it – this will significantly affect senior leader development and expertise required for petroleum operations.

While the Reserve Component has matured considerably as an operational and fully capable logistics force during the last ten years of conflict, there remains a statutory delay in calling up the Reserve due to the necessary mobilization days required before a Reserve unit is ready and available to deploy in theater.[6] Unit readiness levels that can extend theater availability dates and exceed combatant commander requirements further influence this delay. If the Army fails to address this shortfall, it will not be able to provide combatant commanders the requisite petroleum capabilities during early entry operations. As a result, the Army must balance the required capabilities between the active and Reserve Components to provide these capabilities in a timely manner. This will require the development of processes and systems to operationalize petroleum

capability in the Reserve Component. Former Secretary of Defense, Robert M. Gates quote below underscores this vital concern.

> The RCs provide operational capabilities and strategic depth to meet U.S. defense requirements across the full spectrum of conflict. In their operational roles, RCs participate in a full range of missions according to their Services' force generation plans. Units and individuals participate in missions in an established cyclic or periodic manner that provides predictability for the combatant commands, the Services, Service members, their families, and employers. In their strategic roles, RC units and individuals train or are available for missions in accordance with the national defense strategy. As such, the RCs provide strategic depth and are available to transition to operational roles as needed.[7]

This research effort provides senior Army leaders recommendations to consider in addressing the critical need for effective inland petroleum distribution support during the initial phases of operations. In pursuit of this end state, this paper provides an analysis and assessment of current doctrinal procedures to include lessons learned from recent support operations in Kuwait, along with key facts and assumptions that are important in framing subsequent recommendations. The paper concludes by providing recommendations for senior Army leaders to consider which will allow the Army to provide the required petroleum capabilities in support of Joint War fighting requirements.

Existing Doctrine and Force Structure (What's Currently in Place)

> Unlike some other classes of supply, fuel shortages cannot be worked around without significantly changing the operational plan. Besides the greater emphasis that fuel received in planning and preparation in comparison to other classes of supply, other factors unique to fuel supply and distribution were important as well.[8]

The above quote provides important insights into the unique nature of petroleum support operations, and the challenges the Army faces in fulfilling its Title X responsibilities. Over the past decade, the Army has met its obligations in providing

timely and quality inland distribution of petroleum during operations in Iraq and Afghanistan. However, the recent strategic level decision to migrate the preponderance of this type of capability to the Reserve Component influences the Army's ability to provide this support.

The primary organization within the Active Component responsible for ensuring effective petroleum support is the Theater Support Command (TSC). The TSC is the senior logistics command in a theater and rapidly deploys to execute operational level logistics within an assigned theater.[9] The TSC plans, controls, and synchronizes operational level Army deployment and sustainment for the Army Service Component Commander (ASCC) or the Joint Force Commander (JFC). The command is responsible for implementing the broad Army theater petroleum plan and works closely with the Joint Petroleum Office (JPO) and Sub-Area Petroleum Officer (SAPO) to capture all Army, Joint and Coalition Force petroleum and bulk water requirements. The TSC also recommends Army petroleum force structure necessary to establish and receive sufficient petroleum stocks to meet theater storage objectives, maintain quality, and distribute bulk petroleum and bulk water in order to sustain forces.

Two of the most critical capabilities within the TSC are the Theater Petroleum Center (TPC), and the Petroleum Liaison Detachment. The TPC provides liaison between the Defense Logistics Agency (DLA), host/partner nations, the ASCC, Army Petroleum Center (APC), combatant commander, and TSC as needed, and serves as the senior theater Army petroleum advisor to the combatant commander by providing strategic and operational planning support to augment TSC Fuel & Water Branch or ASCC petroleum Branch staffs.[10] The TPC works closely with the JPO and SAPO to

ensure the seamless distribution of petroleum in theater. The petroleum liaison detachment provides liaison service between supported units, host nation petroleum activities, DLA, and the Fuel & Water Branch of the Sustainment Brigade, ESC, and TSC, as well as operational petroleum planning support and technical commodity advice to the Sustainment Brigade, ESC, and TSC.[11] The TPC and petroleum liaison detachments were designed and resourced to provide strategic level petroleum planning support to combatant commanders and TSCs during the planning phase of operations, and to coordinate petroleum resources, facilities and sites between DLA, host/partner nations, the TSC and Liaison Detachments. Currently, the forces and capabilities that enable the TSC to perform these functions reside primarily in the Reserve Component.

During combat and other operational missions, the TSC employs the ESC as a forward deployed headquarters to provide command and control for theater opening, distribution, and petroleum units within and between specified areas of operations.[12] Within the ESC, the fuel and water branch is responsible for the detailed Joint Operations Area (JOA) petroleum plan, and directs the employment of petroleum forces to meet theater plans and fuel requirements and objectives. In executing these functions, the ESC works closely with the SAPO and DLA to plan for, receive, and distribute bulk petroleum in theater. While the ESC functions at the operational level, it may be required to manage petroleum operations at the tactical “receipt and distribution” level until a Sustainment Brigade establishes operations in a theater. Forces and capabilities that enable the TSC to perform these functions reside primarily in the Reserve Component.

The primary organization responsible for executing petroleum operations within this doctrinal construct is the sustainment brigade. The Brigade executes Joint Reception, Staging, Onward Movement, and Integration (JRSOI) as directed by the ESC or TSC in theater and has operational control (OPCON) of units arriving in theater until their parent unit arrives. The brigade is the first tactical level command in theater and provides command and control for Petroleum Support Battalions and their assigned petroleum and medium truck companies.[13] These battalions and companies establish initial theater petroleum stocks in the Tactical Petroleum Terminal (TPT) and the initial petroleum distribution network, including the IPDS pipeline, assault hose lines, medium truck companies, air or aviation support, or host nation / contract vehicles used as a means of distribution. One of the most essential functions performed by the sustainment brigade is continuously monitoring operations and employing petroleum units in a manner that sustains petroleum operations.

The next vital organization within this construct is the petroleum support battalion. The battalion provides command and control, along with administrative, technical, and operational supervision over assigned or attached petroleum support companies, transportation medium truck companies (petroleum), and PPTO Companies that enable the operation and maintenance of the petroleum distribution system.[14] The petroleum battalion operates up to 300 kilometers (375 miles) of multiproduct petroleum pipelines and related terminal facilities, transports Class III (Bulk), and serves as a central dispatching agency to schedule and direct the flow of bulk petroleum through the multiproduct pipeline. Additionally, the battalion supervises a program for quality surveillance of petroleum products by operating a mobile petroleum products laboratory.

There are no petroleum support battalions in the Active Component, and only three petroleum companies.

Historical Analysis

The operational tempo for petroleum units and staffs during the early phases of operations is extremely high as evidenced during the initial stages of support operations prior to the onset of combat operations in Iraq. In October 2002, the 377th Theater Sustainment Command, (Reserve Component), 49th Quartermaster Petroleum Group, (Active Component), and 416th Engineer Command, (Reserve Component), deployed petroleum and engineer forces to Kuwait – well in advance of combat maneuver elements – to establish TPT storage facilities and begin construction of the IPDS pipeline system to support impending combat operations. Demands on these early petroleum and engineer forces were so intense that non-petroleum and engineer forces arriving in theater, including US Marines, were tasked to aid in the construction and establishment of bulk fuel storage sites and pipeline trace. Managing IPDS and TPT equipment employment alone was a daunting task because each TPT consists of over 100 20’ Internal Airlift/Helicopter Slingable-Container Unit (ISU) containers and the IPDS alone has more than 1400 ISU containers. Extensive transportation and material handling equipment assets emplaced containers at appropriate intervals and sites for PPTO and engineer companies to construct the bulk fuel system. In order to meet theater bulk fuel stock objectives, early entry petroleum and engineer units constructed four separate TPTs in strategic locations in Kuwait and positioned follow-on petroleum equipment for forward deployment in Iraq once combat operations commenced.

This historical example highlights the critical nature of early entry operations and the vital role forces capable of providing this capability fulfill for combatant commanders.

It also brings attention to the risks associated with not having the required capability within the Active Component to meet immediate operational demands. This historical analysis strengthens the argument for operationalizing Army petroleum capability in the Reserve Component, and developing and modifying systems and programs across the DOTMLPF spectrum to ensure success within both the Active and Reserve Component.

Key Facts and Assumptions

In further framing the strategic dilemma facing the Army with respect to petroleum force structure and capability, numerous DOTMLPF related facts and assumptions add greater clarity to the context of this research effort. These facts and assumptions highlight the challenges associated with current petroleum force structure, capabilities and doctrine and warrant change.

To begin with, petroleum doctrine is outdated because it references organizational structure and units that no longer exist. Specifically, Field Manual (FM) 10-67, Petroleum Supply in Theaters of Operations, (October 1985) references Army of Excellence (AOE) Petroleum force structure.[15] The decisions associated with the recent FDU make this manual obsolete. Similarly, Theater Sustainment Command, FM 4-94, (February 2010) is outdated because it assigns petroleum planning responsibilities to the petroleum group in support of the TSC and ESC.[16] With the planned deactivation of the three petroleum groups within the Reserve Component, and only one petroleum group in the Active Component, the Army's ability to execute the concepts outlined in FM 4-94 is suspect. Both of these doctrinal manuals require update and alignment with existing force structure decisions.

The decision to migrate the majority of petroleum capability to the Reserve Component will require modification to existing policies and doctrine regarding reserve

mobilization. Currently, Department of Defense Instruction 1235.12, dated February 4, 2010, requires a statutory minimum of 30 days notification before involuntary mobilization of Army Reserve units.[17] In the aftermath of TAA 10-15, the Army migrated all petroleum pipeline, assault hose line, liaison, and headquarters units essential for early entry to the Army Reserve that historically require on average more than 34 mobilization days before being available for deployment.[18] These timelines are not responsive enough to meet Joint War fighting requirements during the early phases of operations.

Organizationally, the Sustainment Brigade is responsible for managing petroleum operations and the ESC and TSC are responsible for planning petroleum operations. Within this doctrinal concept, the brigade assumed doctrinal responsibility for managing the inland distribution of Petroleum, but the Fuel and Water Branch only increased by two Non-Commissioned Officers (NCOs) during the migration of spaces and responsibilities from the Petroleum Group. Additionally, petroleum equipment essential for early entry TPT and IPDS resides in Army Preposition Stocks (APS), but the Active Component has no force structure to operate the equipment.[19]

Other critical shortfalls exist within current manning and equipping constructs. The functional 92F officer Area of Concentration (AOC) converted to 90A92 with a R8 (Petroleum and Water Officer) Additional Skill Identifier (ASI) in 2010, but Human Resources Command (HRC) does not manage position assignments by ASI.[20] Based on this personnel management technique, the Army faces challenges in ensuring petroleum units are manned with personnel that have the skill sets required for success. Furthermore, key petroleum planner positions at the expeditionary sustainment and

theater sustainment command level are manned with officers that have no petroleum experience, background, or formal training.[21] From an equipping standpoint, a 2009 RAND study indicated 7.5 thousand trucks are required to ensure viable IPDS for wholesale throughput of bulk petroleum, however there is no like capability in development because funding was cut for the Rapidly Installed Inland Fuel Transfer System (RIFTS) in 2008.[22]

With respect to professional development, the Army must modify critical shortfalls in training and educational programs focused on petroleum specific capability. The Quartermaster school does not have an advanced petroleum training program for senior leaders.[23] Additionally, while the Combined Arms Support Command Sustainment One Stop website contains current terminology and training tasks for theater sustainment command and expeditionary sustainment command petroleum planning and execution, it still contains references to Petroleum Groups.[24] Arguably, the most important shortfall associated with petroleum specific training and education is that currently, petroleum support companies do not train to install IPDS pipeline, but are heavily relied on to execute pipeline missions within existing operational constructs.

In addition to these facts, several planning assumptions provide further notice to the importance of modifying DOTMLPF constructs as they apply to increased emphasis and reliance on Reserve Component capability to support operational petroleum requirements. Doctrinally, current Major Combat Operation plans will validate the early entry need for IPDS but will require approximately half the number of pipeline distance/assets used in Operation Iraqi Freedom. Early entry priorities for horizontal engineers in the sustainment Brigade, expeditionary sustainment command, and theater

sustainment command will consist of port clearance, road improvement, and base camp infrastructure, not IPDS construction. Furthermore, petroleum Group and battalion level engineers develop petroleum-specific skills in site survey, topographic analysis, pipeline and hose line trace, pipeline and terminal construction, and fixed tank storage facilities (construction and maintenance). Therefore, the requirement to provide IPDS will rely heavily on Army Reserve PPTO, petroleum headquarters units and liaison teams. These assets will not be available for early deployment, and will require 64 days or more to arrive in theater. (Statutory 30 days call up before involuntary mobilization plus 34 days post mobilization training and validation.)

With regard to training, education and manning, the loss of Active Component petroleum battalions and the petroleum group will degrade the “technical” qualifications and petroleum planning skills of NCOs, warrants, and officers. Additionally, the DLA, ASCC, JPO, and SAPO will require senior petroleum qualified officers (O5-O6) and NCOs (E8) to fill critical positions supporting strategic petroleum functions. Similarly, host and partner nations will require assistance from skilled senior level (O6) personnel to coordinate terminal ops, inland distribution, and ground storage (beyond DLA activity at receipt in theater) (a liaison mission done by SAPO). This dynamic highlights the need for improvement in senior level training and educational programs.

Finally, HRC ASI Management is unlikely to improve without a business rule change, and HRC will continue filling positions with personnel that do not possess relevant ASI or petroleum backgrounds at operational and strategic levels in the expeditionary sustainment command, theater sustainment command, and ASCC. As a force provider, ASCC petroleum Branch personnel manage peacetime and in-transit

fuel requirements with DLA and do not provide operational planning support for combatant commanders.

Essential Requirements and Recommendations

The Army must have adequate petroleum force structure and capabilities in place and available to deploy during the early phases of operations and establish the initial theater petroleum receipt, storage, and distribution system while Reserve Component (RC) petroleum organizations mobilize and deploy. At a minimum, this must include the following doctrinal, organizational, training, material, leadership and educational changes:

Doctrine

- The Army must modify current doctrine to reflect existing force structure adjustments resulting from the FDU. FM 10-67, Petroleum Supply in Theaters of Operations still references Army of Excellence Petroleum Doctrine.
- Theater Sustainment Command, FM 4-94 is outdated because it assigns petroleum planning responsibility to the petroleum group in support of the TSC and ESC.
- FM 4-94 must be modified to reflect the impending deactivation of three reserve petroleum groups and the decision to retain only one petroleum group in the AC.
- Existing policies and doctrine regarding reserve mobilization require modification to expedite reserve force mobilization timelines. These timelines must allow the availability of petroleum capabilities not later than 30 days after alert notification. Current policy states that reserve forces will receive a

minimum of 30 days notification prior to involuntary mobilization to support emergent requirements. However, in some instances, RC forces are required sooner. This requires Congressional approval if RC forces are required sooner than the current 30 day window. Most RC forces are provided 30 days advance notice to prepare to relieve and/or augment Active Component (AC) forces to sustain the response effort. In order to meet operational demands within the current force structure construct, mobilization times must be expedited.

Organization

- All PPTO companies currently reside in the Reserve Component. TSCs and ESCs do not have organic POL liaison, quality assurance/ surveillance (QA/QS), and dedicated engineers like the POL Group.[25] Reserve Component units with this capability must be made available not later than 30 days after alert notification.
- The Army should consider adding a PPTO Platoon detachment to the Petroleum Support Company for early entry IPDS capability.[26]
- Given current force structure, the Army will need a PPTO platoon, three Assault Hose Line Teams and a Petroleum Support Battalion.[27]
- One functional petroleum battalion headquarters (using current combined Supply and PPTO design) is required in the Active Component to provide command and control of petroleum forces, provide oversight of the petroleum quality analysis system – enhanced, engineer construction, and the

construction of IPDS and fuel storage sites.[28] This capability can also provide QA/QS of petroleum units arriving in theater.

- An early entry tactical receipt and distribution capability with early entry IPDS pipeline and tactical petroleum terminal capability is required (this equipment is currently in Army Preposition Stocks, and not at unit level).[29] This capability is required early on and should reside in the Active Component.
- A balanced command and control structure with command and staff capability is needed to facilitate the management of initial theater receipt and distribution, and increase commodity accounting and oversight at all echelons.[30] This capability should reside in the Active Component.
- An increase in the grade structure within the TSC is required to provide planning experience at the theater level for large-scale petroleum operations: increase the grade of the Senior Petroleum Systems Technician (current Warrant Officer 3) to Warrant Officer 4 and the E8 (Master Sergeant) Senior Petroleum Ops Sergeant to E9 (Sergeant Major).[31]
- An increase in Petroleum Liaison Detachment capability during early entry is required and can be achieved by assigning two Petroleum Liaison Detachments back into the Active Component structure to allow liaison with TSC, ASCC, DLA, host/partner nations, and GCCs in support of both war and peacetime requirements. Adjust the mission narrative of the liaison detachment to include operational planning as needed to augment ESCs.
- An improvement to TPC capabilities is required and can be achieved by adding one petroleum liaison detachment back into the Active Component

that is led by a Colonel (O6). This detachment will provide better liaison with the ASCC, DLA, APC, host/partner nations and GCCs as required.[32] Adjust the mission narrative to include senior level operational-strategic planning as required, and support to TSC, ASCC and GCCs.

- Convert three Liaison Teams in the Army Reserve Component to the Theater Petroleum Center design. This provides GCCs a senior petroleum operations planner and coordinator that can synchronize DLA and operational petroleum force capabilities in support of strategic plans similar to the function formerly performed by the petroleum groups.[33] This is enabled by reassigning 92F (Petroleum Supply Specialist) personnel and one Captain (O3) from the Distribution Integration Branch (DIB) to the Fuel & Water Branch.[34] Additionally, increase one E7 (Sergeant First Class) to E8 and the W2 to a W3, downgrade one of the E6 (Staff Sergeant) to E5 (Sergeant) for accounting document/system entry; consider adding the R8 ASI to the O4 (Major) Supply & Services Officer assigned to the Fuel & Water Branch.[35] This provides increased planning and operations capability sufficient enough to assume doctrinal responsibilities previously enabled by Petroleum Groups designated for deactivation in the Reserve Component.
- An enhanced Fuel & Water Branch in the ESC is required and can be achieved through an increase in personnel by three NCOs and one warrant officer – E6 92L3O Quality Surveillance Branch NCO, E8 92W5O Senior Water Supervisor, E8 92F5O petroleum Distribution NCO, and W2 923A0 Quality Surveillance / Accounting Officer.[36] This provides planning and

operations capability in the Fuel & Water Branch and adds Quality Assurance/Quality Surveillance (QA/QS) capability at the theater / Joint Operation Area (JOA) level that no longer exists due to the degradation/ absence of petroleum group force structure.[37]

Training

- The Army must address critical shortfalls in training and educational programs focused on petroleum specific capability.
- The Quartermaster school must have an advanced petroleum training program for senior leaders.
- Reserve forces must continue to train on the pipeline and the assault hose line to maintain these skills.

Material

- Inland Petroleum Distribution System (IPDS) pumps are old and TPTs are located in Army Preposition Stocks. These assets must be upgraded through force modernization processes to provide the required capability to support petroleum operations during the early phases of operations.
- In support of this modernization initiative, Reserve Component units with these assets must receive extensive training to ensure readiness.
- Reinstate the RIFTS into the Army acquisition process.

Leadership and Education

- The loss of petroleum groups in the Active Component now results in junior officers and NCO's transitioning from petroleum support companies directly into positions within sustainment brigades with no formalized training.

- The Army must ensure these junior leaders receive training through Professional Military Education programs at the Quartermaster school prior to being assigned at the sustainment brigade level. Senior level leaders with technical expertise in petroleum are needed to include petroleum specific leadership and staff assignments in progressive echelons from tactical through strategic levels.

Conclusion

The Army must move forward with a sense of urgency and demonstrate resolve to rectify organizational shortfalls pertaining to petroleum force structure. Given recent strategic level decisions pertaining to petroleum capabilities, the recommendations provided in this research effort will allow the Army to meet its Title X responsibilities. Based on this research effort and on previous organizational capabilities assessments it is imperative to codify the notion of an “Operational Reserve” to meet early entry demands. This will become even more important as the Army begins to align forces to meet emerging requirements associated with Regionally Aligned Forces. This research paper also emphasizes the importance of having the right force structure in place in order to provide experiential learning and training opportunities for NCOs and officers within the petroleum area of expertise.

The good news for the Army is that it understands the problem and has begun to move forward in the right direction to mitigate gaps between the active and Reserve Components. Having the correct force structure is just one piece of the solution – equally as important is making sure Soldiers are trained and ready to perform their technical duties. The end state is to provide the capability required to support the Joint War Fighter and the nation’s Allies when called on.

Endnotes

[1] Naval Supply Systems Command, “Logistics Quotations,” http://www.au.af.mil/au/awc/awcgate/navy/log_quotes_navsup.pdf (accessed January 12, 2013).

[2] LTC Kevin Daniels, “Petroleum Organization Concept Paper,” Combined Arms Support Command, Fort Lee, VA, May 29, 2012.

[3] Daniels, “Petroleum Organization Concept Paper,” 3.

[4] Daniels, “Petroleum Organization Concept Paper,” 1.

[5] Ibid., 2.

[6] “Military Reserves Federal Call up Authority,” http://usmilitary.about.com/cs/guardandreserve/a/reservecallup.htm (accessed January 13, 2013).

[7] Department of Defense Directive, “Managing the Reserve Components as an Operational Force,” directive applies to OSD, the Military Departments, the Office of the Chairman of the Joint Chiefs of Staff and the Joint Staff, the Combatant Commands, the Office of the Inspector General of the Department of Defense, the Defense Agencies, the DoD Field Activities, and all other organizational entities in the Department of Defense, Washington, DC, October 29, 2008.

[8] Sustainment of Army Forces in Operation Iraqi Freedom, “Battlefield Logistics and Effects on Operations,” (2005 Rand Study), 17.

[9] U.S. Department of the Army, Theater Sustainment Command, Field Manual 4-94, (Washington, DC: U.S. Department of the Army, February 2010), 9.

[10] Daniels, “Petroleum Organization Concept Paper,” 7.

[11] Ibid.

[12] Ibid.

[13] Daniels, “Petroleum Organization Concept Paper,” 7.

[14] Daniels, “Petroleum Organization Concept Paper,” 8.

[15] U.S. Department of the Army, Petroleum Supply in Theaters of Operations, Field Manual 10-67, (Washington, DC: U.S. Department of the Army, February 18, 1983), 2-1.

[16] U.S. Department of the Army, Theater Sustainment Command, Field Manual 4-94, (Washington, DC: U.S. Department of the Army, February 2010).

[17] Deputy Under Secretary of Defense (Plans), Gail H. McGinn, “Accessing the Reserve Component, “Department of Defense Instruction, Under Secretary of Defense for Personnel and Readiness, Washington, DC, February 4, 2010.

[18] Daniels, “Petroleum Organization Concept Paper,” 2.

[19] Daniels, “Petroleum Organization Concept Paper,” 6.

[20] Daniels, “Petroleum Organization Concept Paper,” 9.

[21] Army Sustainment Magazine, “Functional Area 90 Officially Replaced by Logistics Branch as Part of Logistics Officer Changes,” no. 43 (April 2011).

[22].RAND Arroya Center, “Accessing the Army’s Future Needs for Temporary Fuel Pipelines,” http://www.rand.org/content/dam/rand/pubs/technical_reports/2009/RAND_TR652.pdf (accessed January 4, 2013).

[23] Daniels, “Petroleum Organization Concept Paper,” 4.

[24] Sustainment Unit One Stop, “Theater Sustainment Command-Training,” https://www.cascom.army.mil/private/td/multifunctional/website/unit_pages/tsc.html (accessed January 5, 2013).

[25] Ibid.

[26] Daniels, “Petroleum Organization Concept Paper,” 9 .

[27] Ibid.

[28] Daniels, “Petroleum Organization Concept Paper,” 10.

[29] Ibid.

[30] Ibid.

[31] Ibid.

[32] Ibid.

[33] Ibid.

[34] Ibid.

[35] Ibid.

[36] Daniels, “Petroleum Organization Concept Paper,” 7.

[37] Ibid.